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THE GARDEN CALENDAR

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★ AUG 13 1932
U. S. Department of Agriculture

A radio talk by W. R. Beattie, Bureau of Plant Industry, delivered in the Department of Agriculture period of the National Farm and Home Hour, broadcast by a network of 48 associated NBC radio Stations, Tuesday, August 9, 1932.

Last Tuesday in my Garden Calendar talk, I told you about the weed seeds that were buried in the ground thirty years ago, and how thirty-five different kinds sprouted and grew after being dug up and planted this summer. Today, my practical science story is about another kind of seed that lies in the ground and springs a surprise on the gardener or vegetable grower when he is least expecting it. This time, I want to tell you about the spores (or seeds) of a disease and how science has been able to almost completely overcome it.

Years ago, cabbage growers, especially those located in the north eastern sections of the country, began to have their troubles with a disease known as "Yellows." That was the name given it on account of the yellowing of the leaves, and finally the whole plant turning yellow and dying. Cabbage Yellows is caused by a fungus known as Fusarium, and when once the soil gets infested with this fungus, it seems to be just about impossible to get rid of it, and the growers call the infested soils "Cabbage sick."

The "Yellows" disease sometimes appears in the plant bed where the plants are grown, and the young plants become yellow, but, as a rule, the plants are set in the field or garden, and they start off all right, then their lower leaves begin to turn yellow and drop off, but the top goes on for a time making a valiant struggle to grow. More than 25 years ago pathologists began to observe that here and there a few plants on infested soil withstood the disease and produced good heads. That gave them an idea of growing seed from these resistant heads and starting a resistant strain of cabbage. There seemed to be no practical way to rid the soil of the fusarium organism, it lived in the soil almost indefinitely, and it was a question of finding some way of overcoming the disease, or the cabbage industry over a large part of the country would be doomed.

And so, two pathologists, of the Agricultural Experiment Station of the University of Wisconsin -- Drs. L. R. Jones and J. C. Gilman -- selected the worst piece of "Cabbage sick" land they could find in southern Wisconsin, and started work with the Hollander or Danish Ball Head variety of cabbage which was the main variety grown in Wisconsin. Later, Dr. J. G. Walker, John Monteith, and W. B. Tisdale came into the work and a cooperative arrangement was made with the U. S. Department of Agriculture, because it was recognized that this was more than a Wisconsin problem, and that it concerned the cabbage industry of the greater part of the country.

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Out of the scattering heads of the commercial Hollander that withstood the disease, these workers selected a few of the most promising, stored the heads over winter, and then grew seed from them. They even grew the seed in greenhouses during the winter in order to speed up the work because it normally requires the second year to grow seed. They planted this seed and set the resultant plants upon "cabbage sick" land, and made other selections until after several years of careful work, they had a strain of Hollander cabbage that was almost completely resistant to the "yellows." They named this cabbage the "Wisconsin Hollander" to distinguish it from the regular Hollander. Their next step was to plant it on "cabbage sick" soils in a number of places. In every case the Wisconsin strain showed almost complete resistance to the "yellows." Now, cabbage growers are planting the resistant strains almost exclusively wherever the "yellows" disease is in their soil.

You know there are always the dunting Thomases and the skeptics, and so it was with this yellows resistant cabbage. Wherever trials of the resistant strain were planted the men from the colleges and the Department of Agriculture insisted that a small part of the fields be planted with the ordinary commercial strain of Hollander. Well, one trial was usually enough, and the growers wanted only the resistant strain after they saw one year's results. I was in the fields two years ago where this work is being done, and it didn't take me long to see the wonderful difference between the old and the new strains.

Dr. Walker and his associates didn't stop with the perfection of the "yellows" resistant Hollander, but they began on the early and midseason varieties, and those used for kraut, and as a result, seed of resistant strains of several of these varieties are now offered by the seedsmen. It is easy to understand what this means to you folks who have trouble growing the ordinary varieties in your gardens on account of the presence of the *Fusarium* or "yellows" in your soil. I am sure you will join me today in paying tribute to the untiring efforts of these scientists who devote their very lives to working out problems of this character.

Next Tuesday, I hope to give you another scientific achievement story that you can apply in your own gardening.